IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)	
	Steven S. Larsen)
Application No.:	10/690,421)) Art Unit) 3732
Confirmation No.:	3835) 3/32
Filed:	10/20/2003)
For:	Endodontic instrument)
Examiner:	Lewis, Ralph A.)

PETITION TO REVIVE ABANDONED APPLICATION **UNDER 37 C.F.R.** §1.137(b)

Mail Stop Petition Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Attn: Office of Petitions

Sir/Madam:

Statement of unintentional failure to file a continuation in part application.

This application was filed on October 20, 2003, and after prosecution and appeal, became abandoned on November 17, 2011. Applicant now respectfully requests revival of the application in order to file a continuation-in-part application, which is submitted herewith as Exhibit A, concurrent with filing (Application No. 13/444,367; Confirmation No. 4938), and along with corresponding fees.

By way of background, this is Applicant's first patent application. The underlying product is the foundation of a family business involving Applicant's children and they depend on it for their support. Applicant has acted diligently throughout, but has relied on former patent counsel for information regarding status and strategy.

Applicant has not been accurately informed of either status or strategy from former counsel. For example, Applicant did not know that former counsel obtained lengthy extension periods and passed on the accompanying fees. Applicant did not timely know of options relating to a request for continued examination (RCE) or continuation applications prior to abandonment.

On April 2, 2012, Applicant hired undersigned counsel to review the application. Applicant became informed that the application was abandoned. Applicant did not intend that the application become abandoned. The abandonment was unintentional.

Applicant has expended time and resources towards preparation of an expedited continuation-in-part (CIP) application, which he now wishes to file. The CIP is prepared with the intent of overcoming all former objections and rejections by the examiner and appeals board, and to correct what Applicant perceives as deficiencies in the original application occasioned by former counsel.

A declaration from the Applicant on this subject is included herewith. From November 17, 2011 to April 2, 2012, the abandonment was unintentional because Applicant was not aware of either status or options. From April 2, 2012 to the time of this filing, undersigned counsel has actively worked with Applicant to review the file and draft this petition and the reply. The entire delay in filing this required reply from the due date for the reply until the filing of a grantable petition pursuant to 37 CFR 1.137(b) was unintentional.

On behalf of Applicant, the undersigned respectfully and sincerely requests that the application be revived to allow for the filing and examination of the CIP.

Dated this 10th day of April, 2012.

Respectfully submitted,

/Preston P. Frischknecht/ Preston P. Frischknecht Attorney for Applicant Registration No. 61,312 Customer No.: 062733

Telephone No. 435-787-9700

Electronic Acknowledgement Receipt						
EFS ID:	12519182					
Application Number:	13444367					
International Application Number:						
Confirmation Number:	4938					
Title of Invention:	Endodontic Instrument					
First Named Inventor/Applicant Name:	Steven S. Larsen					
Customer Number:	62733					
Filer:	Preston Paul Frischknecht/Heidi Dryden					
Filer Authorized By:	Preston Paul Frischknecht					
Attorney Docket Number:	LAR50-001					
Receipt Date:	11-APR-2012					
Filing Date:						
Time Stamp:	15:56:55					
Application Type:	Utility under 35 USC 111(a)					

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$620
RAM confirmation Number	2647
Deposit Account	
Authorized User	

File Listing:

Document Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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6	Power of Attorney	7SgndPOACIP.pdf	97617 	no	2
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3	Claims	3Claims.pdf	89644 	no	5
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1	Application Data Sheet	1ADS.pdf	1448796382c9e874d9fe241b0baa080db99 1b63d	no	4
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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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PTO/SB/14 (11-08)

Approved for use through 01/31/2014. OMB 0651-0032

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Title of Invention Endodonitic Instrument	Application Data Sheet 37 CFR 1.76		Attorney D	Docket Number LAR50-001								
Publication Information: Request Early Publication (Fee required at time of Request 37 CFR 1.219) Request Not to Publish. I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing. Representative Information: Representative Information: Representative Information should be provided for all practitioners having a power of atomey in the application. Providing the information in the Application Data Sheet does not constitute a power of atomey in the application. Providing the information in the Application Data Sheet does not constitute a power of atomey in the application. Providing the information in the Application Data Sheet does not constitute a power of atomey in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number or complete the Representative Information during processing. Please Select One: © Customer Number © Customer Number © US Patent Practitioner Using Representative Name section (37 CFR 1.1.9) Domestic Benefit/National Stage Information: This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 3U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(4), and need not otherwise be made part of the specific or for a publication Number Continuation in part of 10690421 Prior Application Number Continuation in part of 10690421 Prior Application Number Continuation in the application data sheet constitutes the claim for priority as required by 3 U.S.C. 119(b) and 37 CFR 1.55(a). Providing this information			Application	n Number	r							
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Application Data Sheet 37 CFR 1.76		Attorney Docket Numb	er	LAR50-001				
Application Da	iia Sile	GEL ST CFR 1.70	Application Number					
Title of Invention	Endod	ontic Instrument	c Instrument					
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Additional Assignee Data may be generated within this form by selecting the Add button.								
Signature:								

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A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.									
Signature	/Preston P. Frischkned	cht/	Date (YYYY-MM-DD)	2012-11-04					
First Name	Preston	Last Name	Frischknecht	Registration Number	61312				

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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UNITED STATES PATENT APPLICATION

of

STEVEN S. LARSEN

A Citizen of the United States

1411 East 2100 North

NORTH LOGAN, UTAH 84341

for an

ENDODONTIC INSTRUMENT

TITLE

Endodontic Instrument

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CROSS-REFERENCE TO RELATED APPLICATIONS

5 [0001] This application is a continuation in part of, and claims priority to, U.S. Application No. 10/690,421, Publication No. US 2005-0084818 A1.

TECHNICAL FIELD OF THE INVENTION

[0002] This invention relates to endodontic tools, especially a holder for an endodontic file.

BACKGROUND OF THE INVENTION

[0003] In order to preserve a tooth that has diseased pulp material therein, it is necessary to prevent bacterial proliferation within the pulp canal of the tooth by removing the diseased or necrotic pulp material from the pulp cavity or root canal. After pulp material has been removed or extirpated from a tooth, the pulp cavity or root canal is typically filled or oburated with an inert material in order to prevent future infection of the tooth root. This procedure is referred to as root canal therapy.

[0004] During root canal therapy, it is essential that the entire root canal be cleaned and filled to eliminate all organic matter contained within the root canal. The typical method for root canal therapy is to open the tooth to the pulp chamber and then find each canal orifice opening and work a small endodontic file down to the root end of the tooth. This small file is worked up and down the canal to create a smooth path, clear pulp tissue debris, and start the canal preparation. This initial root preparation is critical to the success of the treatment. This initial preparation of the canal serves as a "glide path" or "pilot hole" for all the other manual or mechanical instruments with files or bits to enlarge this initial preparation of the root canal to a finish prepared shape.

[0005] The root canal system of a human tooth is often narrow, curved, and calcified. It can be extremely difficult to negotiate or clean. Posterior teeth, molars, and premolars can be even more difficult to treat because of the limited room or space in which to operate. The mechanical manipulation the endodontic files in cleaning out the canals in this small limited space can become tedious in preparing the proper "glide path" preparation.

[0006] Conventional dental instruments used during root canal therapy—such as various endodontic file instruments—generally include a thin, flexible, metal shaft or file with an abrasive surface or sharp edges, which enables efficient cleaning of the root canal. A small, elongated plastic grip handle or hub end is attached at one end of the file instrument and is conventionally adapted for gripping by the dentist with the thumb and index finger in a "two-finger" grip.

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[0007] The small, elongated plastic grip of these files mostly have a common dimensional hour glass shape. Most dental manufactures have maintained the uniformity of these grips which are standard in clinical endodontic instruments.

10 [0008] The "two-finger" grip is mostly unique in dentistry for holding the endodontic file instrument. Almost all other working operative instruments in dentistry are held by a long handle in a full hand pencil grip or "pen-grasp-grip." For example the dental mirror, dental explorer, scaler, periodontal probe, material placing instrument, and others all have long handles which the dentist uses in the "pen-grasp-grip" or pencil grip.

[0009] Of additional interest is the fact that all of these dental tools mentioned have built into their design a "dental angle". This "dental angle" allows better access and visibility to the tooth surfaces being examined, when cavities are filled, or teeth are being cleaned. For example: the dental mirror is angled for better access to see the various surfaces of the teeth, especially the posterior teeth. The dental explorer, scaler, periodontal probe, and material placing instrument all use the "dental angle" for the same reason, better access and better visibility in operating the instrument.

[0010] On the other hand, the conventional "two-finger" grip on the small handle of an endodontic file does not lend itself to having a built-in "dental angle." The file is held by the dentist in a vertical straight line position to operate. With the files measuring 25 to 35 millimeters in length, the placement of these files into the canal and the working of these files with the conventional "two-finger" grip can be tedious and time consuming. Accessing molar and premolar teeth can be difficult most cases.

[0011] Visibility to see the canal orifice so as to place the file is also very difficult when holding the file in the conventional file grip. The dentist's fingers holding the file, obstruct the view into the pulp chamber and the small orifice of the canal into which the file is to be placed.

[0012] The problems with the conventional manner of gripping an endodontic file in root canal therapy, especially in molars and premolars are numerous. With the limited space to do the root canal procedure, the "two-finger" endodontic file grip hinders the visibility to find the canals. The dentist's fingers holding the file obstruct the field of view to the canals. It is difficult access and treat these cases with the conventional grip on the file.

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[0013] Molar and premolar teeth usually require multiple filing motions even a hundred or more cycles of motion in preparing the initial "glide path." The filing manipulation in molar and premolar teeth can be very tedious and tiring to the dentist and the patient. The dentist fingers have to be positioned over the tooth to work the file in the canal. Many times in treating molars and premolar it requires the patient to stretch open as wide as possible for quite some time.

[0014] Accordingly, there is a need for an improved endodontic device that overcomes or avoids the above problems, among many others. Holding the standard endodontic file in a pengrasp-grip or pencil grip gives the dentist secure control of the file. An unsecured or slippery file grip can lead to error and injury.

BRIEF SUMMARY OF THE INVENTION

[0015] Therefore, an innovative endodontic instrument is provided which comprises, among other features: a handle having an elongated base with a threaded projection at a first end, the projection having a recessed distal surface capable of cupping a first terminus portion of an elongated plastic grip attached to an endodontic file; and a cap containing a channel extending through a first end of said cap with a first portion of the channel being threaded for mating with the projection of the elongated base of said endodontic instrument handle, said cap possessing a side, and said cap also having a second end containing an aperture through which an endodontic file can project, the diameter of the aperture being selected to be larger than the diameter of the endodontic file but smaller than the diameter of a plastic grip attached to the endodontic file, said cap further having a recessed interior surface capable of cupping a second terminus portion of an elongated plastic grip attached to an endodontic file. This instrument helps prevent the problems noted above, including awkward access angles and unsecured or slippery file grip that can lead to loss of control of the endodontic file during the root canal procedure and the possibility of swallowing or inhalation of the uncontrolled endodontic file leading to serious injury.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0016] FIG. 1 is a side view of an endodontic file in one embodiment of the invention.

[0017] FIG. 2 is a side view of the handle and cap in one embodiment of the invention.

[0018] FIG. 3 is a cross-section, exploded view of the handle, endodontic file, and cap in one embodiment of the invention.

[0019] FIG. 4 is a cross-section of the handle, endodontic file, and cap in one embodiment of the invention.

[0020] FIG. 5 is a perspective view of one embodiment of the invention.

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DETAILED DESCRIPTION OF THE INVENTION

10 [0021] Referring now to Figure 1, an endodontic file 101 is a small, tapered, fluted wire with a tip 102 and to which may be attached an elongated plastic grip 103 with a first terminus portion 104 and a second terminus portion 105. The file 101 is used in preparing and cleaning the root canal of a tooth. In various embodiments, the first and second terminus portions 104, 105 of the elongated plastic grip 103 may have distally curving surfaces and/or partially rounded ends.

[0022] Referring now to Figure 2, the present holder 200 has a handle 201 and a cap 202.

at a first end 205. In various embodiments, the handle 201 has a plurality of longitudinally oriented recessed grooves 211 adjacent to the first end 205 of the elongated base 203 for increasing the handle's grip surface area and for providing rotational control of the instrument when in use. In still other embodiments, the handle has a plurality of transversely oriented recessed grooves 213 on the elongated base 203 for increasing the handle's grip surface area and for reducing longitudinal slippage when in use. Such transversely oriented recessed grooves 213 may be shallower and greater in number than the longitudinally oriented recessed grooves 211.

[0024] Preferably, the maximum outer diameter of the cap 202 is substantially the same as the maximum outer diameter of the elongated base 203.

The cap 202 contains a channel 206 extending through a first end 207 of the cap The first portion 208 of the channel 206 is threaded (not shown) for mating with the projection 204 of the elongated base 203. The second end 209 of the cap 202 contains an aperture 210 through which an endodontic file 101 can project. In various embodiments, the cap 202 also has a plurality of longitudinally oriented recessed grooves 214 adjacent to the first end 207 of the cap

202 for increasing the cap's grip surface area and for providing rotational control when in use. In still other embodiments, the cap has a plurality of transversely oriented recessed grooves 215 for increasing the cap's grip surface area and for reducing longitudinal slippage when in use. Such transversely oriented recessed groves 215 may be shallower and greater in number than the longitudinally oriented recessed grooves 214.

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[0026] Referring now to the cross-section of Figure 3, in various embodiments the threaded projection 204 and cap 202 have surfaces uniquely tailored, partially, and/or substantially complimentary to the distally curving surfaces and/or partially rounded ends of the elongated plastic grip 103 attached to an endodontic file 101. Specifically, the projection 205 of the elongated base 204 may have a recessed distal surface 301 capable of cupping a first terminus portion 104 of an elongated plastic grip 103 attached to an endodontic file 101. Likewise, the cap 202 may have a recessed interior surface 302, located within the channel 206, and capable of cupping a second terminus portion 105 of an elongated plastic grip 103 attached to an endodontic file 101.

Referring now to the cross-section of Figure 4, in use, an endodontic file 101 is placed so that it extends through the aperture 210 with the elongated plastic grip 103 that is attached to the endodontic file 101 (at an end 106 opposite to the tip 102) being in the channel 206. (The diameter of the aperture 210 is selected to be larger than the diameter of the endodontic file 101 but smaller than the diameter of the elongated plastic grip 103.) The cap 202 is then screwed closer to the first end 205 of the elongated base 203 until the elongated plastic grip 103 is securely retained in the channel 206 between the second end 209 of the cap 202 and the projection 204, as a result of the recessed distal surface of the projection 301 cupping the first terminus portion 104 of the plastic grip 103 and the recessed interior surface 302 of the cap 202 cupping the second terminus portion 105 of the plastic grip 103 through a compression fit achieved from the mating of the elongated base 203 and cap 202.

[0028] As a result of this configuration, including the surfaces 301 and 302 of the threaded projection 204 and cap 202 being uniquely tailored, partially, and/or substantially complimentary to the distally curving surfaces and/or partially rounded ends of the elongated plastic grip attached to an endodontic file, the elongated plastic grip 103 is securely maintained by maximizing surface area contact between parts during the mating of the elongated base 203 and cap 202 and consequent compression fit. Indeed, when so securely maintained, the tip of the

endodontic file **102** is not capable of being variably positioned within the instrument along the Y axis due to the compression fit.

[0029] Referring now to Figure 5, a closer perspective view of the elongated plastic grip 103 within the channel illustrates the manner of fitting and structure within one embodiment of the invention.

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[0030] In order to facilitate the work of an endodontist, an option to the present invention is, as portrayed in Figure 4, an endodontic file 101 that initially moves away from the centerline of the endodontic file 101 in a first direction shown by the arrow A and then curves back toward and crosses the centerline as the tip 102 of the endodontic file 101 is approached but does not then again cross the centerline.

[0031] Referring back to Figure 2, in order to accommodate such a bent endodontic file 101, the aperture 210 is extended to the side 216 of the cap 202 and, on such side 216, enlarged to dimensions sufficient to permit the introduction into the channel 206 of the elongated plastic grip 103.

The instrument aids the dentist by changing the thumb-and-finger grip to a secure pencil-type grip, which is more suitable for manipulating the endodontic file **101**. And the bent endodontic file **101** permits the dentist to place his or her hand in a more convenient location.

[0033] As used herein, the term "substantially" indicates that one skilled in the art would consider the value modified by such terms to be within acceptable limits for the stated value. Also as used herein the term "preferable" or "preferably" means that a specified element or technique is more acceptable than another but not that such specified element or technique is a necessity.

[0034] The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

CLAIMS

1. An endodontic instrument, which comprises:

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a handle having an elongated base with a threaded projection at a first end, the projection having a recessed distal surface capable of cupping a first terminus portion of an elongated plastic grip attached to an endodontic file; and

a cap containing a channel extending through a first end of said cap with a first portion of the channel being threaded for mating with the projection of the elongated base of said endodontic instrument handle, said cap possessing a side, and said cap also having a second end containing an aperture through which an endodontic file can project, the diameter of the aperture being selected to be larger than the diameter of the endodontic file but smaller than the diameter of a plastic grip attached to the endodontic file, said cap further having a recessed interior surface capable of cupping a second terminus portion of an elongated plastic grip attached to an endodontic file.

- 2. The endodontic instrument as recited in claim 1, wherein:
 - the elongated base has a maximum outer diameter;
 - said cap has a maximum outer diameter; and

the maximum outer diameter of said cap is substantially the same as the maximum outer diameter of the elongated base.

- 3. The endodontic instrument as recited in claim 1, further comprising:
- an endodontic file with a tip and also with an elongated plastic grip having first and second terminus portions, said grip attached to said endodontic file at an end opposite to the tip, said endodontic file extending through the aperture in the second end of said cap and the attached plastic grip being contained within the channel of said cap so that the recessed distal surface of the projection cups the first terminus portion of the plastic grip and the recessed interior surface of the cap cups the second terminus portion of the plastic grip through a compression fit achieved from the threaded mating of the elongated base and cap.
 - 4. The endodontic instrument as recited in claim 3, wherein:
 - the elongated base has a maximum outer diameter;
 - said cap has a maximum outer diameter; and
- the maximum outer diameter of said cap is substantially the same as the maximum outer diameter of the elongated base.

- 5. The endodontic instrument of claim 3, wherein the first and second terminus portions of the elongated plastic grip have distally curving surfaces.
- 6. The endodontic instrument of claim 3, wherein the first and second terminus portions of the elongated plastic grip have partially rounded ends.
- 5 7. The endodontic instrument of claim 1, wherein the tip of the endodontic file is not capable of being variably positioned within the instrument along the Y axis through a compression fit.
 - 8. The endodontic instrument as recited in claim 1, wherein: the aperture in the second end of said cap extends to the side of said cap and, on such side, is enlarged to dimensions sufficient to permit the introduction in the channel of the plastic grip attached to the endodontic file.
 - 9. The endodontic instrument as recited in claim 8, wherein: the elongated base has a maximum outer diameter; said cap has a maximum outer diameter; and

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- the maximum outer diameter of said cap is substantially the same as the maximum outer diameter of the elongated base.
 - 10. The endodontic instrument as recited in claim 1, the handle further having a plurality of longitudinally oriented recessed grooves adjacent to the first end of the elongated base for increasing the handle's surface area.
- 20 11. The endodontic instrument as recited in claim 1, the cap further having a plurality of longitudinally oriented recessed grooves for increasing the cap's surface area.
 - 12. The endodontic instrument as recited in claim 10, the handle further having a plurality of transversely oriented recessed grooves on the elongated base for increasing the handle's surface area, said transversely oriented grooves being shallower and greater in number than the longitudinally oriented recessed grooves.
 - 13. An endodontic instrument, which comprises:
 - a handle having an elongated base with a threaded projection at a first end and a maximum outer diameter, the projection further having a recessed distal surface capable of cupping a first terminus portion of a plastic grip attached to an endodontic file;
- a cap having a maximum outer diameter substantially the same as the maximum outer diameter of the elongated base and containing a channel extending through a first end of said cap

with a first portion of the channel being threaded for mating with the projection of the elongated base of said endodontic instrument handle, said cap possessing a side, and said cap also having a second end containing an aperture through which an endodontic file can project, the diameter of the aperture being selected to be larger than the diameter of the endodontic file but smaller than the diameter of an elongated plastic handle attached to an endodontic file, the aperture extending to the side of said cap and, on such side, is enlarged to dimensions sufficient to permit the introduction in the channel of an elongated plastic grip attached to an endodontic file, said cap further having a recessed interior surface capable of cupping a first terminus portion of an elongated plastic grip attached to an endodontic file; and

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an endodontic file with a tip and also with an elongated plastic grip having first and second terminus portions, said grip attached to said endodontic file at an end opposite to the tip, said endodontic file extending through the aperture in the second end of said cap and the attached plastic grip being contained within the channel of said cap so that the recessed distal surface of the projection cups the first terminus portion of the elongated plastic grip and the recessed interior surface of the cap cups the second terminus portion of the elongated plastic grip through a compression fit achieved from the threaded mating of the elongated base and cap.

- 14. The endodontic instrument as recited in claim 13, the handle further having a plurality of longitudinally oriented recessed grooves adjacent to the first end of the elongated base for increasing the handle's grip surface area and for providing rotational control of the instrument when in use.
- 15. The endodontic instrument as recited in claim 13, the cap further having a plurality of longitudinally oriented recessed grooves for increasing the cap's grip surface area and for providing rotational control of the instrument when in use.
- 16. The endodontic instrument as recited in claim 13, the handle further having a plurality of transversely oriented recessed grooves on the elongated base for increasing the handle's grip surface area and for reducing longitudinal slippage, said transversely oriented grooves being shallower and greater in number than the longitudinally oriented recessed grooves.
- 17. The endodontic instrument of claim 13, wherein the tip of the endodontic file is not capable of being variably positioned within the instrument along the Y axis through a compression fit.

- 18. The endodontic instrument of claim 13 wherein the first and second terminus portions of the elongated plastic grip have distally curving surfaces.
- 19. The endodontic instrument of claim 13 wherein the first and second terminus portions of the elongated grip have partially rounded ends.
- 20. An endodontic instrument, which comprises:

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a handle having an elongated base with a threaded projection at a first end and a maximum outer diameter, the handle further having a plurality of longitudinally oriented recessed grooves adjacent to the first end of the elongated base for increasing grip surface area on the instrument, the handle further having a plurality of transversely oriented recessed grooves on the elongated base for increasing grip surface on the elongated base, said transversely oriented grooves being shallower and greater in number than the longitudinally oriented recessed grooves, and the projection having a recessed distal surface capable of cupping a first terminus portion of a plastic grip attached to an endodontic file;

a cap having a maximum outer diameter substantially the same as the maximum outer diameter of the elongated base and containing a channel extending through a first end of said cap with a first portion of the channel being threaded for mating with the projection of the elongated base of said endodontic instrument handle, said cap possessing a side, and said cap also having a second end containing an aperture through which an endodontic file can project, the diameter of the aperture being selected to be larger than the diameter of the endodontic file but smaller than the diameter of an elongated plastic grip attached to the endodontic file, the aperture extending to the side of said cap and, on such side, is enlarged to dimensions sufficient to permit the introduction in the channel of an elongated plastic grip attached to an endodontic file, said cap further having a recessed interior surface capable of cupping a second terminus portion of an elongated plastic grip attached to an endodontic file, said cap further having a plurality of longitudinally oriented recessed grooves for increasing the cap's grip surface area and for providing rotational control of the instrument when in use, said cap further having a plurality of transversely oriented recess grooves for increasing the caps grip surface area and for reducing longitudinal slippage when in use, said transversely oriented grooves being shallower and greater in number than the longitudinally oriented recessed grooves; and

an endodontic file with a tip and also with an elongated plastic grip having first and second terminus portions, said grip attached to said endodontic file at an end opposite to the tip,

said endodontic file extending through the aperture in the second end of said cap and the attached plastic grip being contained within the channel of said cap so that the recessed distal surface of the projection cups the first terminus portion of the plastic grip and the recessed interior surface of the cap cups the second terminus portion of the plastic grip through a compression fit achieved from the threaded mating of the elongated base and cap.

- 21. The endodontic instrument of claim 20, wherein the tip of the endodontic file is not capable of being variably positioned within the instrument along the Y axis through a compression fit.
- 22. The endodontic instrument of claim 20 wherein the first and second terminus portions of the elongated plastic grip have distally curving surfaces.

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23. The endodontic instrument of claim 20 wherein the first and second terminus portions of the elongated grip have partially rounded ends.

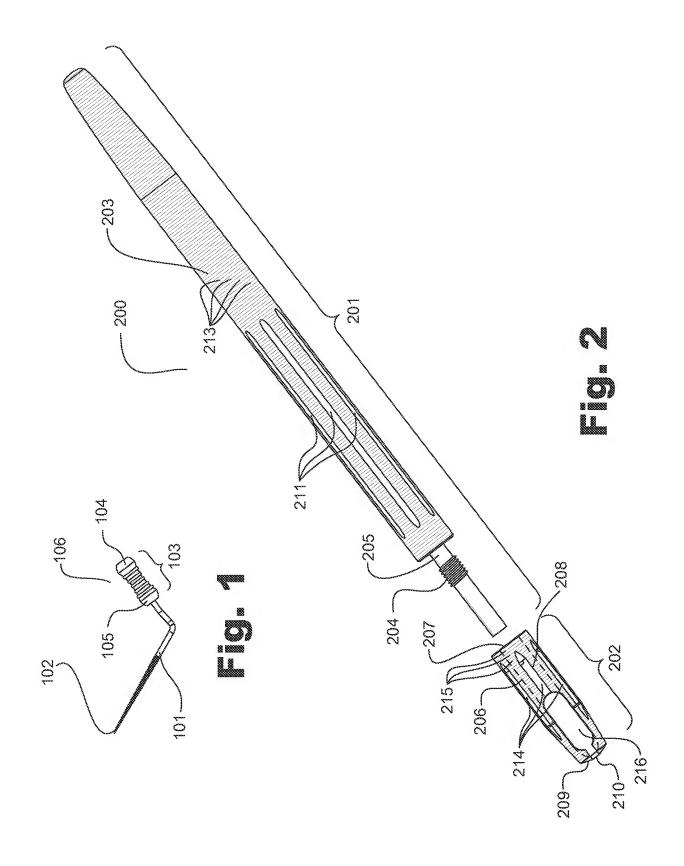
ABSTRACT

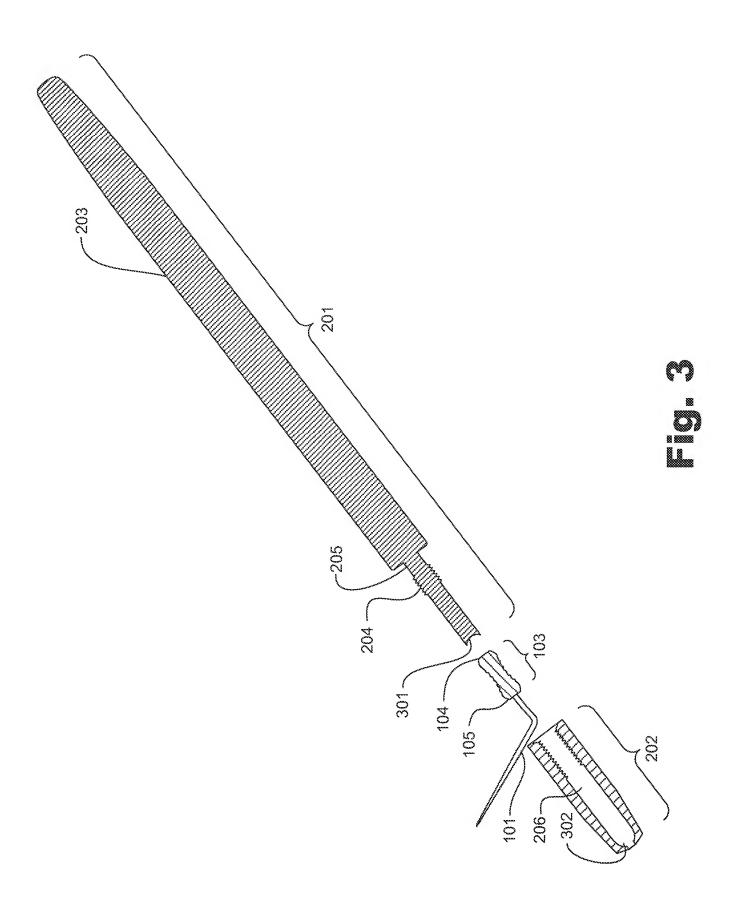
The invention is an endodontic instrument which comprises, among other features: a handle having an elongated base with a threaded projection at a first end, the projection having a recessed distal surface capable of cupping a first terminus portion of an elongated plastic grip attached to an endodontic file; and a cap containing a channel extending through a first end of said cap with a first portion of the channel being threaded for mating with the projection of the elongated base of said endodontic instrument handle, said cap possessing a side, and said cap also having a second end containing an aperture through which an endodontic file can project, the diameter of the aperture being selected to be larger than the diameter of the endodontic file but smaller than the diameter of a plastic grip attached to the endodontic file, said cap further having a recessed interior surface capable of cupping a second terminus portion of an elongated plastic grip attached to an endodontic file. This instrument helps prevent the problems noted above, including awkward access angles and unsecured or slippery file grip that can lead to that can lead to loss of control of the endodontic file during the root canal procedure and the possibility of swallowing or inhalation of the uncontrolled endodontic file leading to serious injury.

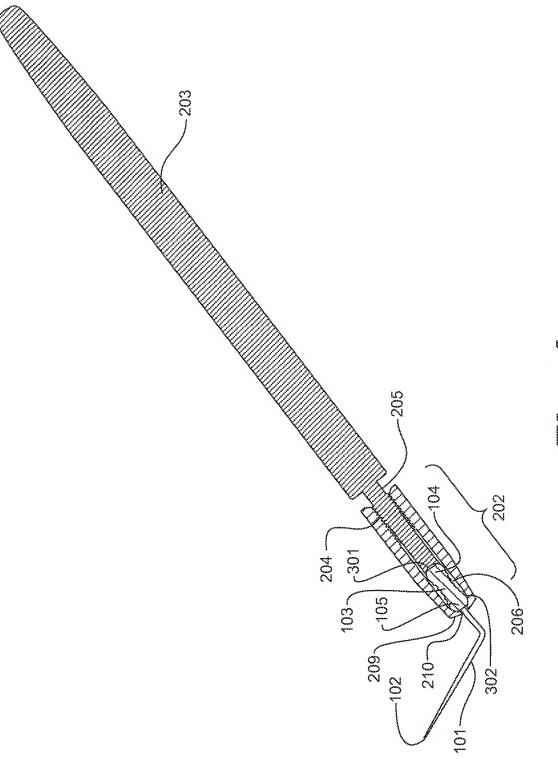
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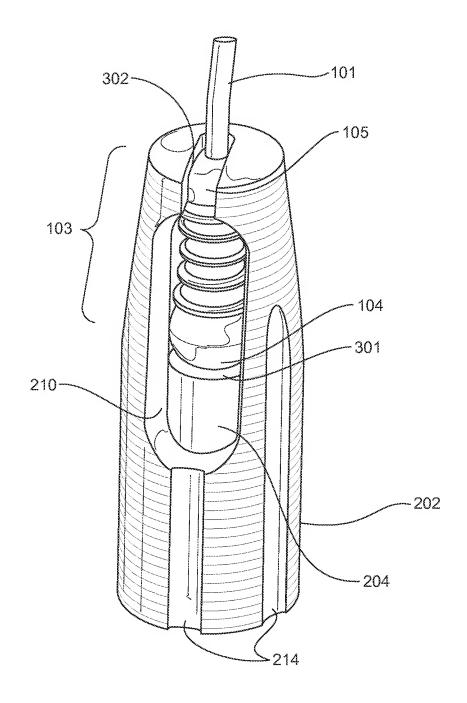


Fig. 5

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Declaration Submitted With initial Filing

Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(f)) required)

Attorney Docket Number	LAR50-001
First Named Inventor	Steven Larsen
COM	PLETE IF KNOWN
Application Number	
Filing Date	
Art Unit	and parameters and the second
Examiner Name	

I hereby declare that: (1) Each inventor's residence, mailing address, and citizenship are as stated below next to their name; and (2) I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention titled: Endodontic Instrument (Title of the Invention) the application of which 1 is attached hereto OR was filed on (MM/DD/YYYY) as United States Application Number or PCT International Application Number _____ and was amended on (MM/DD/YYYY) (if applicable). I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, as amended by any amendment specifically referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1,56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application. Authorization To Permit Access To Application by Participating Offices If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application. In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application. In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

[Page 1 of 3]

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DECLARATION — Utility or Design Patent Application

Claim of Foreign Priority	Benefits				
I hereby claim foreign priorit inventor's or plant breeder's a country other than the United application for patent, invento before that of the application of	rights certificated States of Amer or's or plant bres	(s), or 365(a) of any PCT intrice, listed below and have all der's rights certificate(s), or a	ernational application so identified below, b	which designa y checking the	sted at least one box, any foreign
Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Co	py Attached? NO
13.000					

Additional foreign ap	pplication numbe	r(s) are listed on a suppleme	ntal priority data shee	t PTO/SB/028	attached hereto.

[Page 2 of 3]

PTO/SB/01 (04-09)

Approved for use through 01/31/2014. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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DECLARATION — Utility or Design Patent Application

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NAME OF SOLE OR FIRST INVENTOR:			A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any]) Steven			Family Name or Surname Larsen					
Inventor's Signature			Date 4-10-12					
Residence: Clty	State		Country		C	Citizenship		
No. Logan.	Utah		USA		L	JSA		
Mailing Address								
150 East 200 North, Ste. G								
City	State		Zip			Country		
Logan	Utah		84321		L	JSA		
Additional inventors or a legal representative are being named on the supplemental sheet(s) PTO/Sty02A or 02LR attached hereto								

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PTO/SEART (01-09)
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Application Number		1
Filing Date	3	
First Named Inventor	Sleven Larsen	
Title	Endodontic Instrument	
Art Unit		
Examiner Name		
Attorney Docket Number	LAR50-001	1

I hereby revoke all previous powers of attorney given in the above-identified application.								
A Power of Altorney is submitted herewith.								
	OR			62733				
OR I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected the								
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Applicant/Inventor.								
OR Assignee of record of the entire interest. See 37 CFR 3.71, Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on								
2 SIGNATURE of Applicant or Assignee of Record								
Signatu	Signature Study Augu-			4-10-12				
Name	lame Steven S. Larsen			435-752-0164				
Title and Company								
NOTE: Signatures of sit the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.								
*Total of forms are submitted.								

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application, Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer. U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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